## Appendix B Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

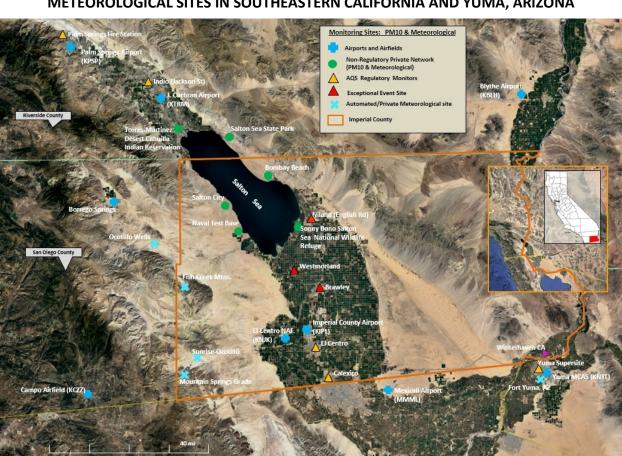
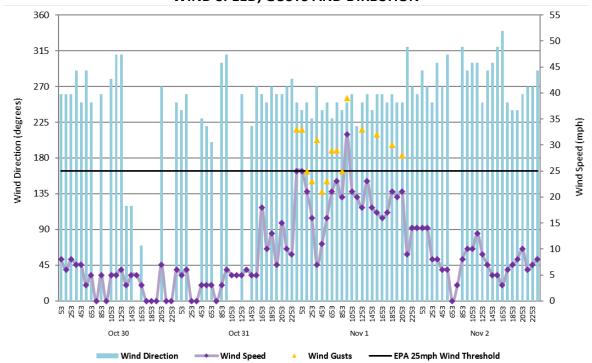


FIGURE B-1
METEOROLOGICAL SITES IN SOUTHEASTERN CALIFORNIA AND YUMA, ARIZONA

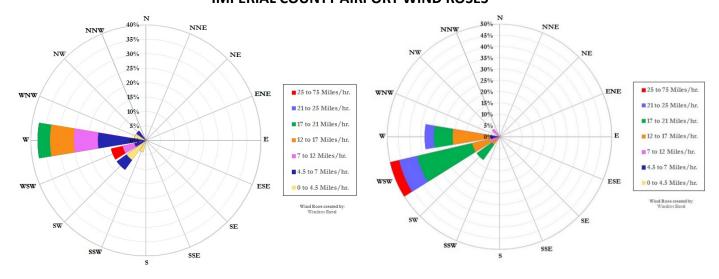
**Fig B-1:** This image shows the meteorological sites and the air quality monitoring sites used in this document. Google Earth base map. Inset locator map of California from Wikipedia

### IMPERIAL COUNTY STATIONS FIGURES B-2 THROUGH B-13

FIGURE B-2
IMPERIAL COUNTY AIRPORT (KIPL)
WIND SPEED, GUSTS AND DIRECTION

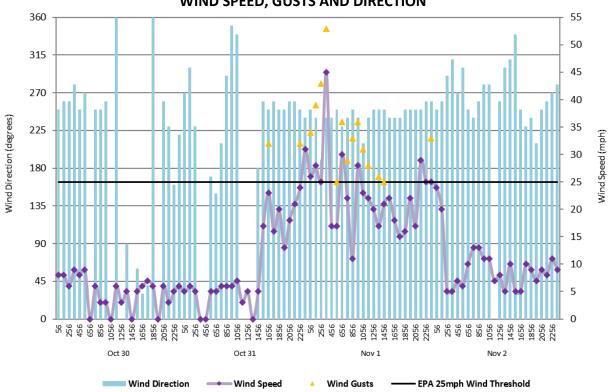


FIGURES B-3
IMPERIAL COUNTY AIRPORT WIND ROSES

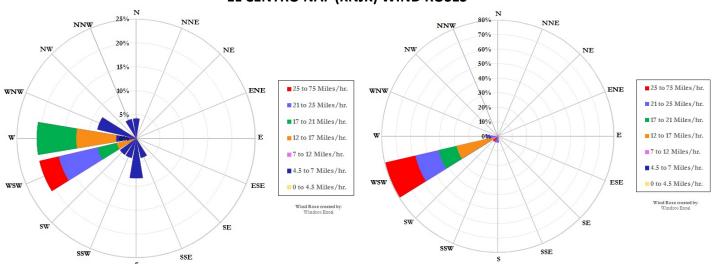


**Figs B-2 and B-3:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the NCEI's QCLCD system

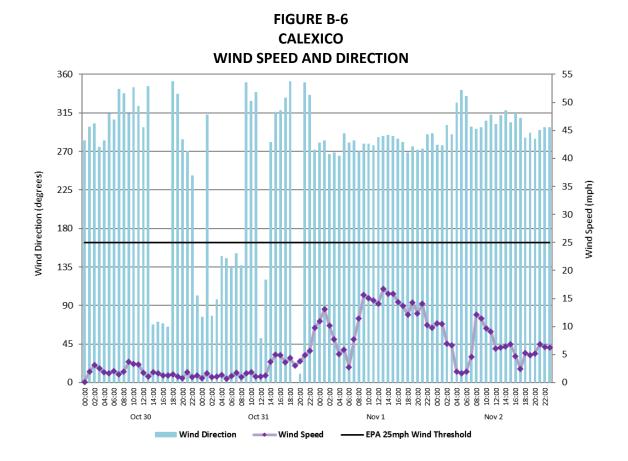


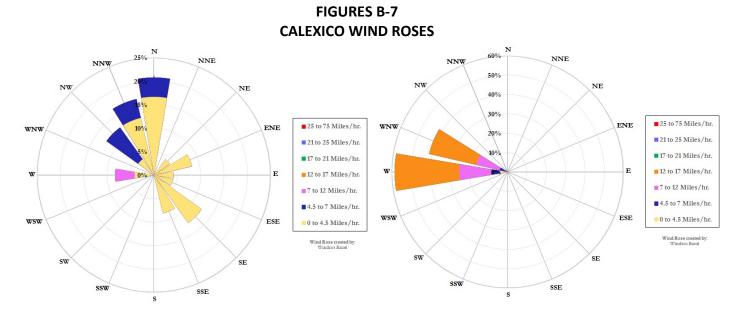


## FIGURES B-5 EL CENTRO NAF (KNJK) WIND ROSES



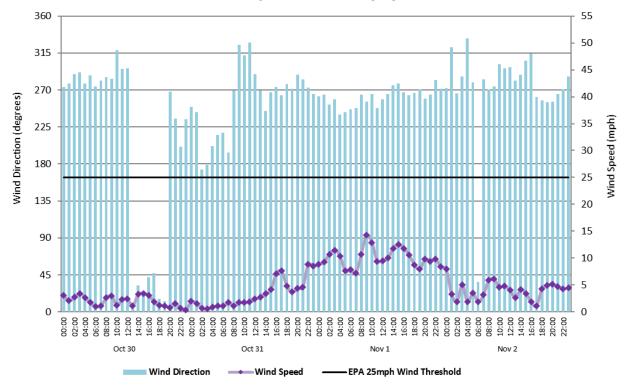
**Figs B-4 and B-5:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the NCEI's QCLCD system



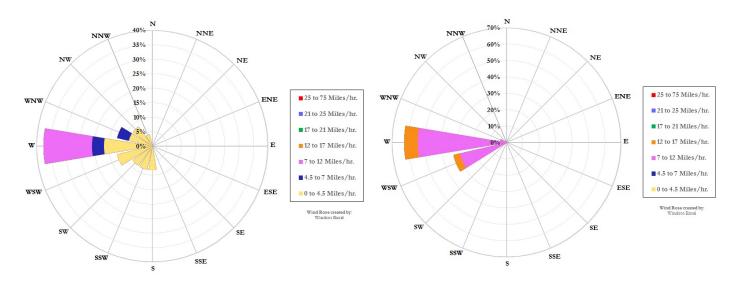


**Figs B-6 and B-7:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the EPA's AQS system

## FIGURE B-8 EL CENTRO WIND SPEED AND DIRECTION

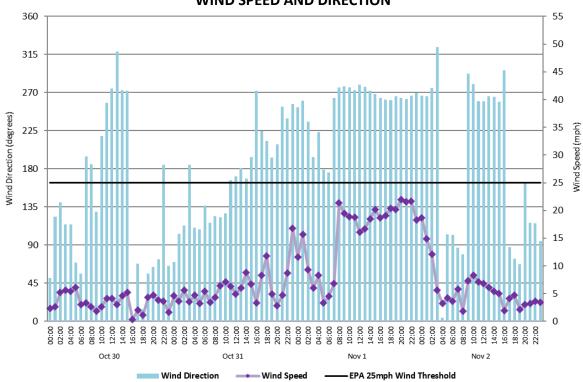


### FIGURES B-9 EL CENTRO WIND ROSES

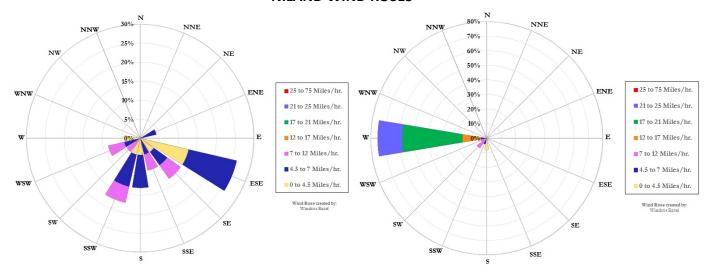


**Figs B-8 and B-9:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the EPA's AQS system

## FIGURE B-10 NILAND WIND ROSE WIND SPEED AND DIRECTION

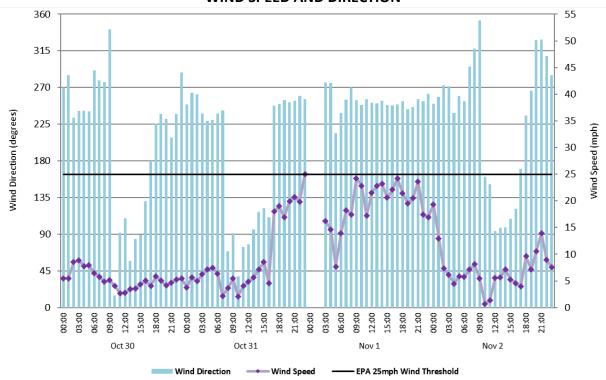


### FIGURE B-11 NILAND WIND ROSES

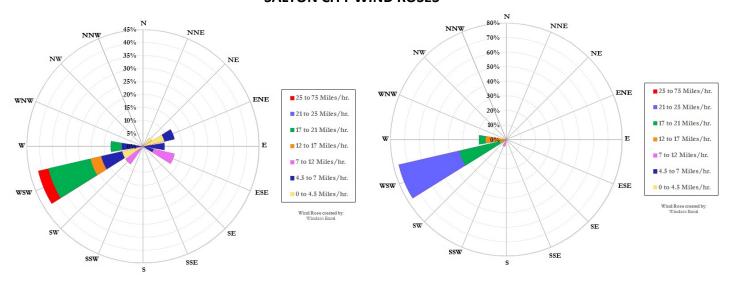


**Figs B-10 and B-11:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the EPA's AQS system

## FIGURE B-12 SALTON CITY WIND SPEED AND DIRECTION



### FIGURES B-13 SALTON CITY WIND ROSES



**Figs B-12 and B-13:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

### RIVERSIDE COUNTY STATIONS FIGURES B-14 THROUGH B-17

# FIGURE B-14 BLYTHE AIRPORT (KBLH) WIND SPEED, GUSTS AND DIRECTION

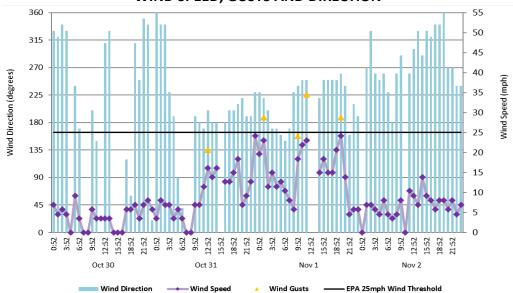


Fig B-14: Wind data from the University of Utah's MesoWest system

## FIGURE B-15 JACQUELINE COCHRAN AIRPORT (KTRM) WIND SPEED, GUSTS AND DIRECTION

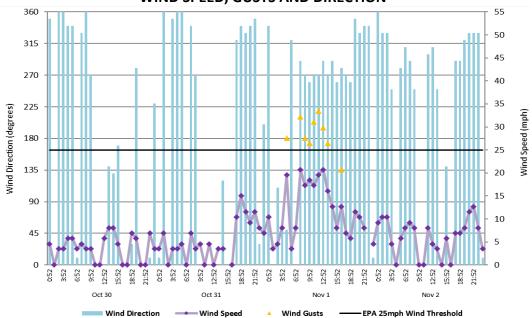
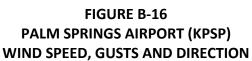


Fig B-15: Wind data from the University of Utah's MesoWest system



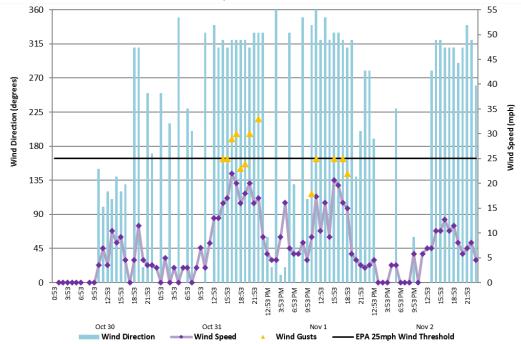


Fig B-16: Wind data from the University of Utah's MesoWest system

## FIGURE B-17 TORRES-MARTINEZ DESERT CAHUILLA INDIAN RESERVATION WIND SPEED AD DIRECTION

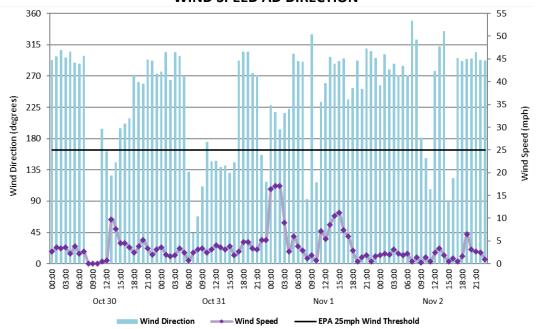


Fig B-17: Wind data from the EPA's AQS system

#### **SAN DIEGO COUNTY**

## FIGURE B-18 CAMPO AIRPORT (KCZZ) WIND SPEED, GUSTS AND DIRECTION

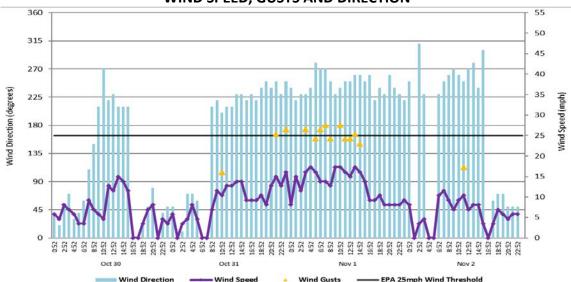
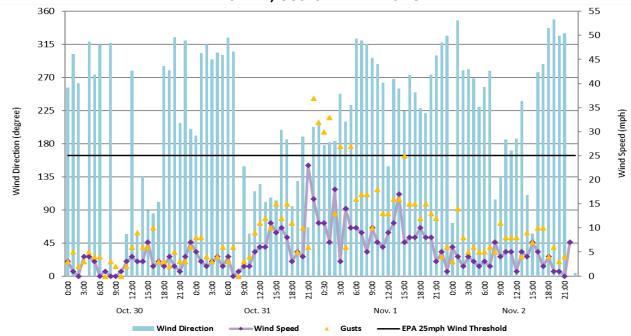
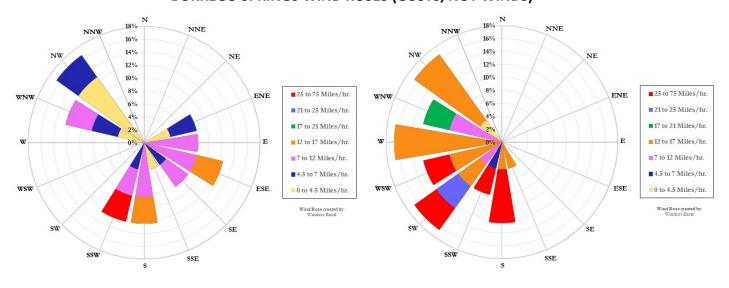


Fig B-18: Wind data from the University of Utah's MesoWest system

### FIGURE B-19 BORREGO SPRINGS WIND SPEED, GUSTS AND DIRECTION

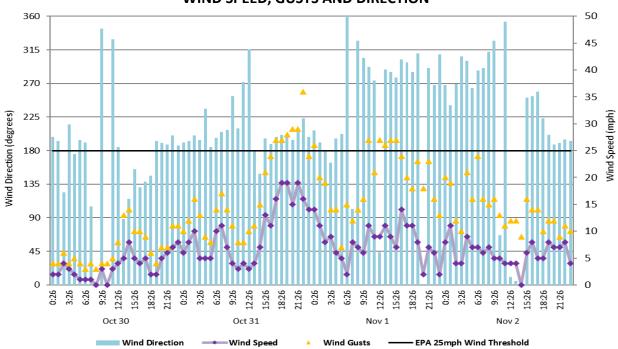


FIGURES B-20
BORREGO SPRINGS WIND ROSES (GUSTS, NOT WINDS)

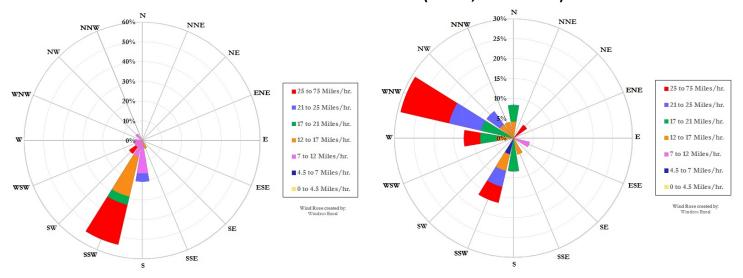


Figs B-19 and B-20: Wind roses (gusts) are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

# FIGURE B-21 FISH CREEK MOUNTAINS WIND SPEED, GUSTS AND DIRECTION

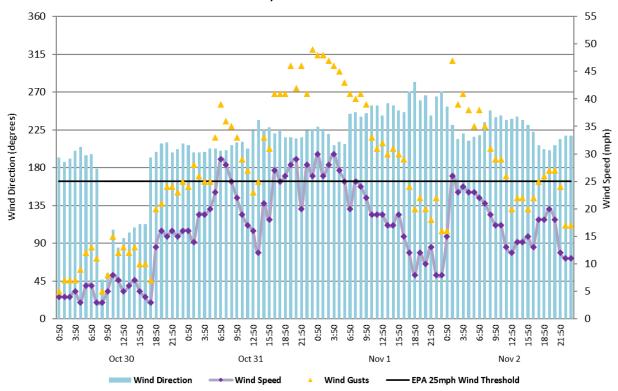


FIGURES B-22
FISH CREEK MOUNTAINS WIND ROSES (GUSTS, NOT WINDS)

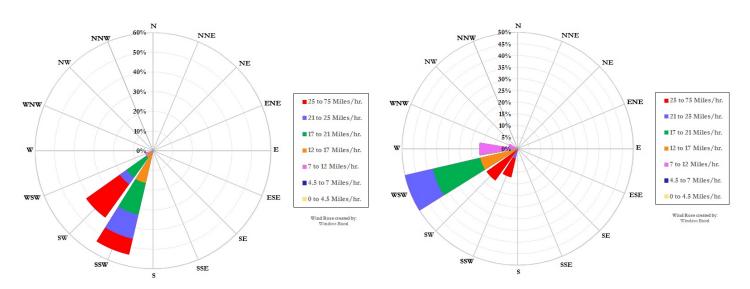


Figs B-21 and B-22: Wind roses (gusts) are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

### FIGURE B-23 MOUNTAIN SPRINGS GRADE WIND SPEED, GUSTS AND DIRECTION

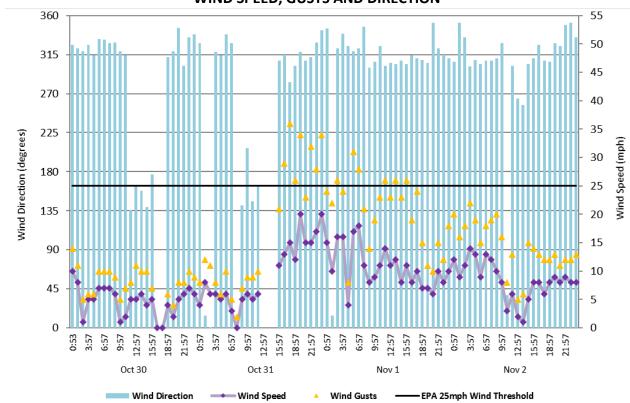


### FIGURES B-24 MOUNTAIN SPRINGS GRADE WIND ROSES

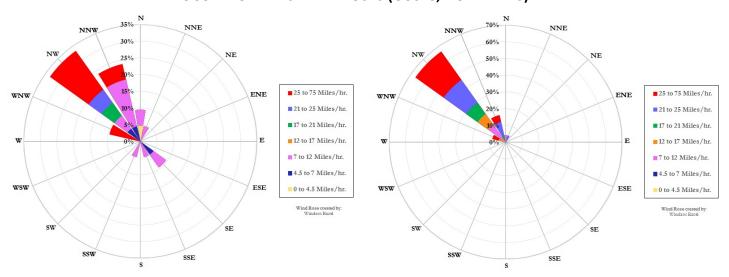


**Figs B-23 and B-24:** Wind roses are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

# FIGURE B-25 OCOTILLO WELLS WIND SPEED, GUSTS AND DIRECTION

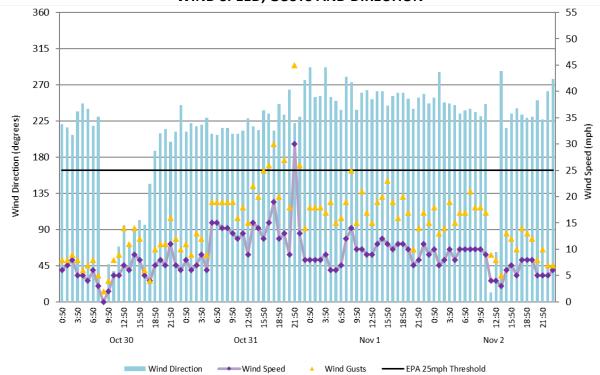


## FIGURES B-26 OCOTILLO WELLS WIND ROSES (GUSTS, NOT WINDS)

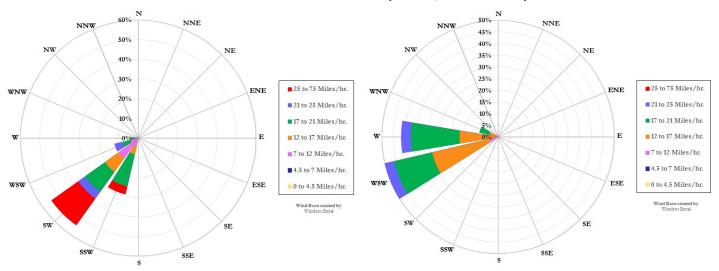


Figs B-25 and B-26: Wind roses (gusts) are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

## FIGURE B-27 SUNRISE-OCOTILLO WIND SPEED, GUSTS AND DIRECTION



### FIGURES B-28 SUNRISE-OCOTILLO WIND ROSES (GUSTS, NOT WINDS)



Figs B-27 and B-28: Wind roses (gusts) are for October 31, 2014 (left) and November 1, 2014 (right). Wind data from the University of Utah's MesoWest

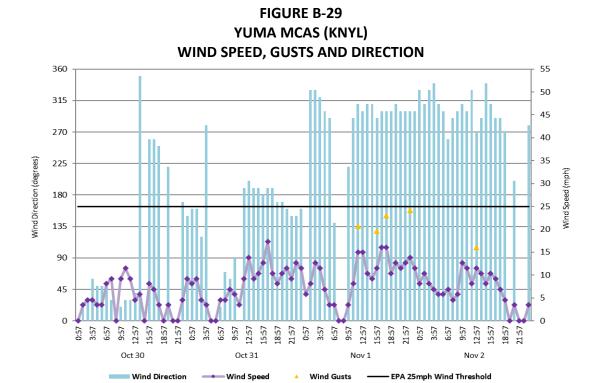


Fig B-29: Wind data from the University of Utah's MesoWest system

#### **MEXICO**

## FIGURE B-30 MEXICALI INTERNATIONAL AIRPORT (MMML) WIND SPEED AND DIRECTION

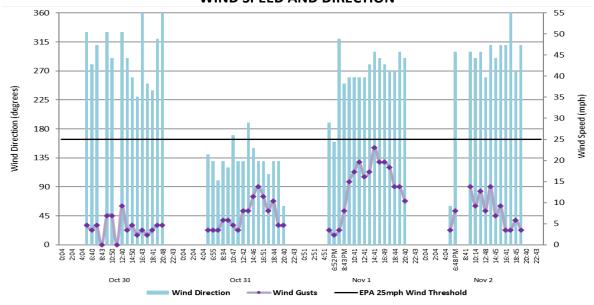


Fig B-30: Wind data from the University of Utah's MesoWest system

### FIGURE B-31 IMPERIAL COUNTY AIRPORT (KIPL) QCLCD DATA

QUALITY CONTROLLED Local Climatological Data: IMPERIAL COUNTY AIRPORT

U.S. Department of Commerce National Oceanic & Atmospheric Administration

#### QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final)

National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

HOURLY OBSERVATIONS TABLE IMPERIAL COUNTY AIRPORT (03144) IMPERIAL, CA (10/2014)

Elevation: -58 ft. below sea level

Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	B Te	Dry Bulb Temp		Wet Bulb Temp		ew pint mp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)		Chg	Sea Level Pressure	Report Type	Precip. Total (in)	Alti- meter (in. hg)
Ļ.		_		_		_	-	_	_	(F)	_	- 10			10		$\overline{}$	(mb)	, 5,	-		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
		12	CLR	10.00		65	18.3					45		240		29.90			29.84	AA		29.84
	0153		CLR	10.00		63	17.2		11.2					260		29.89				AA		29.83
	0253		CLR	10.00		63	17.2		10.3					000		29.89			29.83	AA		29.83
	0353		CLR	10.00		62	16.7		10.5			45		000		29.89				AA		29.83
	0453		CLR	10.00			16.1		10.3					230		29.89				AA		29.83
	0553		CLR	10.00		58	14.4					60		220		29.90			29.84	AA		29.84
31	0653		CLR	10.00		62	16.7		10.8		5.0	46		200		29.91			29.85	AA		29.85
	0753		CLR	8.00			20.6							000		29.92				AA		29.86
	0853		CLR	10.00			23.9					36		300		29.92			29.86	AA		29.86
	0953		CLR	10.00			26.1					35	6	310		29.91				AA		29.85
31	1053		CLR	10.00			27.8					31		VR		29.88			29.82	AA		29.82
31	1153		CLR	10.00			29.4					27		VR		29.84			29.78	AA		29.78
31	1253	12	CLR	10.00			29.4						5	260		29.80				AA		29.74
31	1353		CLR	10.00		86	30.0	62	16.5	43	6.1	22		VR		29.79			29.73	AA		29.73
31	1453		CLR	10.00			30.0					22		220		29.78			29.72	AA		29.72
31	1553		CLR	10.00			29.4					25		270		29.77			29.71	AA		29.71
31			CLR	7.00			26.1							260		29.78			29.71	AA		29.72
31	1753		CLR	10.00			23.9					46	10	250		29.79			29.72	AA		29.73
31	1853		CLR	10.00			22.8				11.7			270		29.80			29.74	AA		29.74
31	1953		CLR	10.00	l		22.2							260	l	29.80	I		29.73	AA	l	29.74
31	2053		CLR	10.00			22.2				11.1			260		29.81				AA		29.75
	2153		CLR	10.00			21.7							270	l	29.81	I		29.75	AA	l	29.75
	2253	12	CLR	10.00			21.1						9	280		29.82	I			AA	_	29.76
31	2353	12	CLR	8.00	-RA	72	22.2	61	<b> 15.8</b>	52	11.1	50	25	250	33	29.81			29.75	AA	T	29.75

Dynamically generated Thu Dec 17 19:20:47 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD

QUALITY CONTROLLED Local Climatological Data: IMPERIAL COUNTY AIRPORT

U.S. Department of Commerce National Oceanic & Atmospheric Administration

#### QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final) HOURLY OBSERVATIONS TABLE IMPERIAL COUNTY AIRPORT (03144) IMPERIAL, CA (11/2014)

National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -58 ft. below sea level Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date		Station Type	Sky Conditions	Visibility (SM)	Weather Type	E	Dry Bulb Temp		Wet Bulb Temp		ew oint oint	Rel Humd %	Wind Speed (MPH)			Station Pressure (in. hg)	Press Tend		Sea Level Pressure	Report Type	Precip. Total (in)	Alti- meter (in. hg)
			***************************************			(F)	(C)	(F) (C		(F)	(C)		(		(	(in. ng)		(mb)	(in. hg)		()	(mr. mg/
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	0053	12	CLR	10.00	-RA	70	21.1	59	15.1	51	10.6	51	25	240	33	29.82			29.76	AA	T	29.76
01	0153	12	CLR	10.00	-RA	70			14.3			46	21 16	250	25 23	29.83			29.77	AA	T	29.77
01	0253	12	CLR	10.00	-RA	69	20.6						16	230	23	29.82			29.76	AA	T	29.76
01	0310	12	FEW003	3.00	-RA		21.1					46	31	240	40	29.80			M	SP		29.74
01	0353	12	CLR	10.00		70	21.1					47	78	270	31	29.83			29.77	AA	T	29.77
01	0453	12	CLR	10.00		67					10.0		11	240	21	29.84			29.78	AA		29.78
01	0553	12	CLR	10.00		69					10.6		16	250	23	29.85			29.79	AA		29.79
01	0653	12	FEW070	10.00		72					11.1		21	230	29	29.87			29.80	AA		29.81
01	0753	12	BKN060 OVC080	10.00		71					10.6		23	250	29	29.91			29.85	AA		29.85
01	0853	12	FEW070	10.00		72	22.2	59	14.8	48	8.9	43	20 32	240	25 39	29.93			29.87	AA		29.87
	0953	12	CLR		HZ	73	22.8					38	32	250	39	29.93			29.87	AA		29.87
01	1053	12	CLR	10.00			23.3					36	21	260		29.95			29.88	AA		29.89
01	1153	12	CLR	10.00		76	24.4					31	20	220		29.92			29.86	AA		29.86
01	1253	12	CLR CLR	10.00		76	24.4				5.0	29 28	18 23	250 260	33	29.90			29.84	AA AA		29.84
	1353			10.00		/5	23.9						18			29.90			29.83			29.84
01	1453	12	CLR	10.00		75	23.9					28 33	17	240		29.90			29.84	AA		29.84
01	1553	12	CLR FEW080	10.00		/2	22.2					35	16	260 260	32	29.90			29.84	AA		29.84
01	1653 1753	12	CLR	10.00		68 67	20.0	53	11.8	39	3.9	35	17	250		29.93 29.94			29.87 29.88	AA AA		29.87
01	1853	12	CLR	10.00		65			11.5			42	21	260	30	29.94			29.88	AA		29.89
01	1953	12	CLR	10.00		64			11.3			43	20	250	30	29.95			29.89	AA		29.90
01	2053	12	CLR	10.00	I	62			11.3				21	250	28	29.96		ı	29.89	AA		29.90
01	2153	12	CLR	10.00	I	62	16.7	52	11.2	43	6.1	50	9	320	20	29.96		ı	29.90	AA	I	29.90
01	2253	12	CLR	10.00	I	61			11.0			52	14	270		29.97		ı	29.91	AA	I	29.91
01	2353		CLR	10.00	I		16.1					50	14	260	ı	29.97		1	29.91	AA	I	29.91
V .	2000	12	OLIN	10.00		01	10.1	01	10.7	142	0.0	00	1.4	200		20.01		$\overline{}$	20.01	/M		20.01

Dynamically generated Thu Dec 17 19:34:36 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD

### FIGURE B-32 EL CENTRO NAF (KNJK) QCLCD DATA

QUALITY CONTROLLED Local Climatological Data: NAF

U.S. Department of Commerce National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (10/2014) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Date		Station Type	Sky Conditions	Visibility (SM)	Weather Type	Bulb Temp		Wet Bulb Temp		Tellip		Rel Humd %	Wind Speed (MPH)		Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Chg	Pressure	Report Type	Total	Alti- meter (in. hg)
L.	_	_				(F)	-		(C)				, ,	_		, ,,	-	(mb)	(in. hg)	_	11	,
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	0056		CLR	10.00		65			10.8			37	5	270		29.88				AA		29.84
				9.00		65			10.4			34	6	300	ı	29.87				AA	l	29.83
			CLR	10.00		63			10.8			43	5	230	1	29.87			29.87	AA	l	29.83
			CLR	10.00		59		49				48	0	000		29.87			29.88	AA	l	29.83
31	0456		CLR	10.00		61		49				41	0	000	ı	29.87			29.88	AA	l	29.83
	0556		FEW100	10.00		58		48				48	0 5 5	170		29.88			29.89	AA	l	29.84
	0656 0756		CLR CLR	10.00		63			10.6			41	6	150 210	l	29.88 29.90			29.89	AA AA	l	29.84 29.86
			CLR	10.00		1/1			12.7			33 29	6	290	l	29.90			29.91 29.90	AA	l	29.86
			CLR	10.00		82			17.1			32	6	350	l	29.88			29.88	AA	l	29.84
	1056		CLR	10.00		94			16.8			27	7	340		29.86			29.86	AA	l	29.82
	1156		CLR	10.00		85			16.8			25	3	VR	ı	29.82			29.83	AA	l	29.78
31			FEW120 FEW200	10.00		85			16.1			22	5	VR	1	29.79			29.79	AA	l	29.75
31			FEW120 FEW200	10.00		87			16.3			20	lő	000	1	29.77			29.78	AA	l	29.73
31	1456		FEW120 FEW200	10.00		87			16.3			20	5	180		29.76			29.76	AA	l	29.72
31	1556			10.00		86			17.6			27	17	260		29.76			29.76	AA	l	29.72
31	1656		FEW080 FEW120 SCT200			79					11.1		23		32	29.76			29.77	AA	l	29.72
31	1756	5	CLR	10.00		76	24.4	62	16.6	52	11.1	43	16	260		29.77			29.78	AA	l	29.73
31	1856		CLR	10.00		75	23.9	62	16.4	52	11.1	45	20	250		29.78			29.78	AA	l	29.74
31	1956	5	CLR	10.00		74	23.3	61	16.0	51	10.6	45	13	250	l	29.77	ı		29.78	AA	l	29.73
			CLR	10.00		74					10.6		18	260		29.79			29.80	AA	l	29.75
			CLR	10.00		73					10.6		21	260	l	29.80	ı		29.80	AA	l	29.76
			CLR	10.00		73					10.6		24		32	29.80	ı			AA	l	29.76
31	2356	5	CLR	10.00		72	22.2	60	15.5	51	10.6	48	31	240		29.80			29.81	AA		29.76

Dynamically generated Thu Dec 17 19:44:20 EST 2015 via <a href="http://www.ncdc.noaa.gov/qclcd/QCLCD">http://www.ncdc.noaa.gov/qclcd/QCLCD</a> QUALITY CONTROLLED Local Climatological Data: NAF

U.S. Department of Commerce National Oceanic & Atmospheric Administration QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (11/2014) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Dynamically generated Thu Dec 17 19:43:51 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD